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A NOTE ON

THE VALUE OF MASSAGE

AND

EXERCISE TREATMENT

BY

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UNDER the various titles of "exercise treatment," "physical therapeutics," and "medical gymnastics," the treatment of certain cases by systematic exercises and manipulation has of late received considerable attention.

The object of this paper is to briefly describe the methods adopted and a few of the results obtained, in the department especially devoted to this subject at the Northern Hospital.

In Sweden, where the subject under discussion is scientifically taught, it is included amongst the compulsory classes in the medical curriculum.

There are two special modes of procedure adopted—(*a*) the manual method and (*b*) the mechanical method.

Manual exercises consist of active and passive movements performed either *with* or *on* a certain part of the body, and constitute the "Ling System" of gymnastics. Ling was the founder of the celebrated Central Institute in Stockholm, and the first to teach exercises on physiological and anatomical lines.

Massage, which mainly consists of systematic manipulations, may be included amongst the passive exercises, and is a necessary and valuable adjunct to both methods.

The mechanical method owes its inception to Dr Zander, also of Stockholm, who has devised numerous "exercise machines," which are marvels of ingenuity.

An exercise apparatus or machine consists of a contrivance

of weights and levers, which can be so adjusted that a patient may either perform an active movement or be passively exercised.

I cannot adequately describe one of these machines without diagrams, but when seen the idea is simplicity itself.

The disciples of Ling and the followers of Zander each claim that their special method is superior.

From observations of both methods, I concluded that each was valuable, and that the practice of the one did not exclude the employment of the other; in fact, a combination of the two methods is advantageous.

We have at the Northern Hospital seven machines, modifications of Zander's patterns.

In hospital practice such apparatus is peculiarly valuable. One can fix a patient on his machine, where he must exercise himself for from 5 to 15 minutes, which leaves one at liberty to attend to others.

An exceedingly common complaint in hospital is a temporarily stiff joint after prolonged rest for treatment of fractures, or after an operation on the joint.

Though a minor trouble in itself, it nevertheless precludes a working man from performing his full work.

A busy house-surgeon has not the time to attend to gradual loosening of the joint; and if forcible redression be resorted to, the wasted muscles are not in a condition to perform the movements necessary to maintain the "full play" of the joint.

Thus occurs the opportunity for special exercise treatment.

A patient arrives for treatment immediately the splints are removed, or as soon as he is out of bed after a joint operation.

At the first attendance the joint and neighbouring muscles are massaged, and gentle passive movement is performed. He is next put on a suitable machine, with a light weight and limited range of movement. He works the lever to and fro himself, slightly at first, but at each attendance the weight and compass are both slightly increased.

In a word, he breaks down his adhesions with his own

muscles. As a result, there is freer movement of the stiffened joint *pari passu* with increase of power in the wasted muscles.

The patient attends twice weekly, and is shown appropriate exercises which he must perform at home during the interval.

Frequently also a little acceleration is applied in the form of slight manual redression, but never sufficient to cause very much pain.

During the last six months there have been 92 cases, comprising 1071 attendances in the department.

Though the majority of these cases were surgical, comprising scoliosis, stiff joints, wry-neck, flat foot, adhesions of tendons, ruptured muscles, etc., there have been a few medical cases, including phthisical flat chests (for breathing exercises); rheumatoid arthritis, sciatica, muscular rheumatism, etc., for massage.

Following are a few descriptive cases:—

Mrs L., æt. 39, was admitted into Mr Damer Harrisson's ward in May 1905. Nearly two years previously she had fallen and injured her right hip, and had since been unable to put her right foot to the ground, and almost entirely confined to bed. There was $1\frac{3}{4}$ inch shortening of the right leg, and on examination by the X-rays a badly united fracture of the neck of the femur was revealed. The hip-joint was stiff and powerless.

On May 19th I commenced treatment with slight passive movements and massage. On the 23rd she was fixed on the "hip" machine, and used a light weight with small range of movement. She evinced signs of much pain, but nevertheless persevered. Twice a week the joint was exercised with, gradually increasing weight and compass. After two months treatment she could extend the leg fully at the hip, and could flex it to a right angle with a good weight attached to the leg, all without pain. On August 1st she could stand without crutches, and on August 12th she was discharged, able to bear considerable weight on the right foot, and to walk fairly well with the aid of a stick.

J. R., a boy aged 17, was admitted to Mr Harrisson's ward on August 4th, 1904. As the result of an accident, the popliteal artery was divided and the external popliteal nerve of the right leg was injured.

He came under my care on July 7th, suffering from loss of muscular power of the anterior tibial and peroneal muscles, all of which were wasted.

Muscle-kneading of the affected muscles, exercises on machine No. II., and home exercises were practised. After two months' treatment he could flex the ankle joint and extend the toes with considerably increased power, except in the case of the great toe, where the antagonistic action of the flexor was so strong as to require tenotomy. He is still progressing favourably.

M. M'I., a girl aged 14, suffering from anæmia and phthisical chest, was sent from the Medical Out-Patient department for breathing exercises, September 8th.

Circumference of deflated chest, $23\frac{1}{2}$ ins.
„ inflated „ 26 „

She was instructed carefully in respiratory and chest-expanding exercises, which she undertook to practise thoroughly at home. On October 10th, one month later, there was an increase of upwards of $\frac{3}{4}$ of an inch in both circumferences, and on November 14th the inflated chest measured $27\frac{1}{4}$ inches, a total increase of $1\frac{1}{4}$ inches in two months.

G. J., an old man of 72, was sent on May 23rd, complaining of stiffness and weakness in the right knee. His tibia had been fractured two months previously.

He was exercised on the "knee" machine, and progressed slowly. After six weeks he was able to discard his crutches, and to walk with a stick. A month later he resumed his work as a carter.

W. T., aged 35, contracted an axillary abscess on the left side, which was opened on April 5th, along the posterior fold of the axilla, and in due course healed.

He was sent to me on May 30th, with deficient movement

of the left shoulder. Elevation of the left arm and backward and forward movement of the extended arm were considerably limited in range, due, evidently, to adhesions between the scapular muscles and the latissimus dorsi, etc. Slight forcible redression in the various directions, with massage and suitable exercises, were employed, and after a month's attendance he had so far improved as to be able to resume his work as a dock labourer.

G. W., aged 40, fractured his left patella, which was sutured on the 16th September.

Exercise treatment began on October 24th, when his knee was quite stiff. Within three weeks flexion up to a right angle was obtained, and a fortnight later the function of the joint was restored.